

What is claimed is:

1. A method for driving a plasma display panel comprising:

5       generating wall voltage in cells to be lighted within a screen so that the wall voltage is higher than that in other cells;

      detecting a display ratio that is a ratio of the number of cells to be lighted to the number of cells  
10   before the application of the display pulse;

      selecting one display pulse waveform that corresponds to the detection result of the display ratio among plural types of display pulse waveforms in accordance with a predetermined relationship between a  
15   display ratio and the plural types of display pulse waveforms; and

      applying a display pulse having the selected display pulse waveform to all cells after that, so as to generate discharge only in the cells to be lighted.

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2. A method for driving a plasma display panel comprising:

      generating wall voltage in cells to be lighted within a screen so that the wall voltage is higher than  
25   that in other cells;

      converting a frame into a plurality of subframes;

      detecting a display ratio that is a ratio of the number of cells to be lighted to the number of cells for each of the plural subframes;

30       selecting one display pulse waveform that

corresponds to the detection result of the display ratio among plural types of display pulse waveforms for each subframe in accordance with a predetermined relationship between a display ratio and the plural types of display pulse waveforms; and

applying a display pulse having the selected display pulse waveform to all cells so as to display the corresponding subframe.

10           3. A method for driving a plasma display panel comprising:

generating wall voltage in cells to be lighted within a screen so that the wall voltage is higher than that in other cells;

15           converting a frame into a plurality of subframes;  
detecting a display ratio that is a ratio of the number of cells to be lighted to the number of cells for each of the plural subframes;

deciding a pulse having a first step-like waveform  
20 in which amplitude decreases between a leading edge and a trailing edge as a display pulse for a display of a subframe having a display ratio that is less than a set value;

deciding a pulse having a second step-like waveform  
25 in which amplitude increases between a leading edge and a trailing edge as a display pulse for a display of a subframe having a display ratio that is larger than or equal to the set value; and

applying the decided display pulse to all cells so  
30 as to display the corresponding subframe.

4. The method according to claim 3, wherein  
amplitude of at least one step of the first step-like  
waveform is equal to amplitude of one step of the second  
5 step-like waveform pulse.

5. The method according to claim 3, wherein each of  
the first step-like waveform and the second step-like  
waveform has two steps, amplitude of one of the steps in  
10 the first step-like waveform is equal to amplitude of one  
of the steps in the second step-like waveform, and  
amplitude of the other step of the first step-like  
waveform is equal to amplitude of the other step of the  
second step-like waveform.

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6. A method for driving a plasma display panel  
comprising:

generating wall voltage in cells to be lighted  
within a screen so that the wall voltage is higher than  
20 that in other cells;

converting a frame into a plurality of subframes;  
detecting a display ratio that is a ratio of the  
number of cells to be lighted to the number of cells for  
each of the plural subframes;

25 deciding a pulse having a rectangular waveform as a  
display pulse for a display of a subframe having a display  
ratio that is less than a set value;

deciding a pulse having a step-like waveform in  
which amplitude increases between a leading edge and a  
30 trailing edge and the maximum amplitude is larger than the

amplitude of the rectangular waveform as a display pulse for a display of a subframe having a display ratio that is larger than or equal to the set value; and

5       applying the decided display pulse to all cells so as to display the corresponding subframe.

7. A method for driving a plasma display panel comprising:

10       generating wall voltage in cells to be lighted within a screen so that the wall voltage is higher than that in other cells;

      converting a frame into a plurality of subframes;  
      detecting a display ratio that is a ratio of the number of cells to be lighted to the number of cells for  
15       each of the plural subframes;

      deciding a pulse having a rectangular waveform as a display pulse for a display of a subframe having a display ratio that is less than a set value;

20       deciding a pulse having a step-like waveform in which amplitude decreases between a leading edge and a trailing edge for a display of a subframe having a display ratio that is larger than or equal to the set value; and

      applying the decided display pulse to all cells so as to display the corresponding subframe.

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8. A method for driving a plasma display panel comprising:

30       generating wall voltage in cells to be lighted within a screen so that the wall voltage is higher than that in other cells;

converting a frame into a plurality of subframes;  
detecting a display ratio that is a ratio of the  
number of cells to be lighted to the number of cells for  
each of the plural subframes;

5       deciding a pulse having a step-like waveform in  
which amplitude changes from a first value to a second  
value that is smaller than the first value between a  
leading edge and a trailing edge as a display pulse for a  
display of a subframe having a display ratio that is less  
10   than a set value;

deciding a pulse having a rectangular waveform whose  
amplitude is larger than the second value as a display  
pulse for a display of a subframe having a display ratio  
that is larger than or equal to the set value; and  
15   applying the decided display pulse to all cells so as to  
display the corresponding subframe.

9. A method for driving a plasma display panel  
comprising:

20       generating wall voltage in cells to be lighted  
within a screen so that the wall voltage is higher than  
that in other cells;

converting a frame into a plurality of subframes;  
detecting a display ratio that is a ratio of the  
25   number of cells to be lighted to the number of cells for  
each of the plural subframes;

deciding a pulse having a step-like waveform in  
which amplitude changes from a first value to a second  
value that is smaller than the first value between a  
30   leading edge and a trailing edge as a display pulse for a

display of a subframe having a display ratio that is less than a first set value;

deciding a pulse having a rectangular waveform whose amplitude is larger than or equal to the second value as a display pulse for a display of a subframe having a display ratio that is larger than or equal to the first set value and less than a second set value that is larger than the first set value;

deciding a pulse having a second step-like waveform in which amplitude increases between the leading edge and the trailing edge as a display pulse for a display of a subframe having a display ratio that is larger than or equal to the second set value; and

applying the decided display pulse to all cells so as to display the corresponding subframe.

10. A method for driving a plasma display panel comprising:

generating wall voltage in cells to be lighted within a screen so that the wall voltage is higher than that in other cells;

converting a frame into a plurality of subframes; detecting a display ratio that is a ratio of the number of cells to be lighted to the number of cells for each of the plural subframes;

determining the number of discharge times for each subframe so that a luminance ratio between subframes becomes a set ratio and power consumption for one frame becomes less than or equal to a set value for each of plural combinations in waveform selection for selecting

one of plural types of display pulse waveforms for each subframe, in accordance with a relationship among each of predetermined plural types of the display pulse waveforms, a display ratio, luminance in one discharge and power

5 consumption in one discharge;

calculating luminance of one frame for each of combinations of the determined waveform selection and the number of discharge times; and

10 applying a display pulse having one of plural types of the display pulse waveforms to the cell the corresponding times in a display of each subframe so as to match the combination of the waveform selection having the highest luminance of one frame and the number of discharge times.

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11. The method according to claim 10, wherein the plural subframes are classified into two groups, and the waveform selection is performed for subframes that belong to one of the groups while the display pulse waveform is  
20 fixed for subframes that belong to the other group.